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Letter to the Editor

Taipei Azalea – Supraglottic airways (SGA) preassembled with high-efficiency particulate air (HEPA) filters to simplify prehospital airway management for patients with out-of-hospital cardiac arrests (OHCA) during Coronavirus Disease 2019 (COVID-19) pandemic



The WHO has announced COVID-19 pandemic situation on Mar 11, 2020.¹ In many countries, prehospital health providers are facing the potential threat of contracting COVID-19 while providing resuscitation. Several resuscitation-associated interventions are listed as aerosol generating procedures²; among them, tracheal intubation, non-invasive ventilation, tracheotomy, and manual ventilation before intubation are associated with increased risk of transmission.

Some emergency medical services (EMS) involve the use of suspended endotracheal intubation during this pandemic, but most systems still use SGA for prehospital airway management. Such strategies may be affected by the local prevalence of COVID-19 infection. We recommend the attachment of high-efficiency particulate air (HEPA) filters to SGA for infection control as it has been proven to be effective against SARS transmission in 2003 outbreak.³ Although the second-generation SGA usually provides adequate seal,⁴ when the airway is secured and cardiopulmonary resuscitation (CPR) is resumed, aerosols could be easily expelled through the opening of SGA and put emergency medical technicians (EMTs) near the patient at risk, as usually some time consumption occurs until the filter is attached. To minimize this period of unfiltered air exchange, we proposed a preassembled SGA and HEPA filter set for rapid, easy, and safer airway management.

We use i-gel[®] and a Heat & Moisture Exchanging Filter (HMEF) for demonstration (Inter-Therm[™], Intersurgical Ltd, Wokingham, UK). Before the assembly, it should be ensured that the environment is clean and hands are washed and gloved. The i-gel[®] is put through a CPR training face shield, with a 1.5 cm opening at the mouthpiece (Fig. 1a, b). The i-gel[®] is then again put through a 1-cm-long cut on the securing tape (Fig. 1c). Finally, the HMEF is attached to the connector of the i-gel[®] (Fig. 1d).

The securing tape should be folded around the neck of i-gel[®] (Fig. 1e), and the CPR face shield should then wrap the HMEF to make it appear like petals of Azalea, the official flower of Taipei City (Fig. 1f). To complete the packaging, a medical tubular gauze is applied to hold the face shield and all contents within (Fig. 1g, h). This preassembled unit is stored with lubricant in an air-tight plastic bag that will usually be used in the next 24 h.

During the placement in the airway, the EMT holds CPR to avoid aerosol generation. The i-gel[®] is then lubricated and inserted until resistance is felt; the tubular gauze is then removed, so that the face shield will fall over patient's mouth naturally. The CPR is then resumed immediately while securing the i-gel[®]. An end tidal CO₂ monitor can be attached distal to the HMEF, and the patient should be ventilated gently.

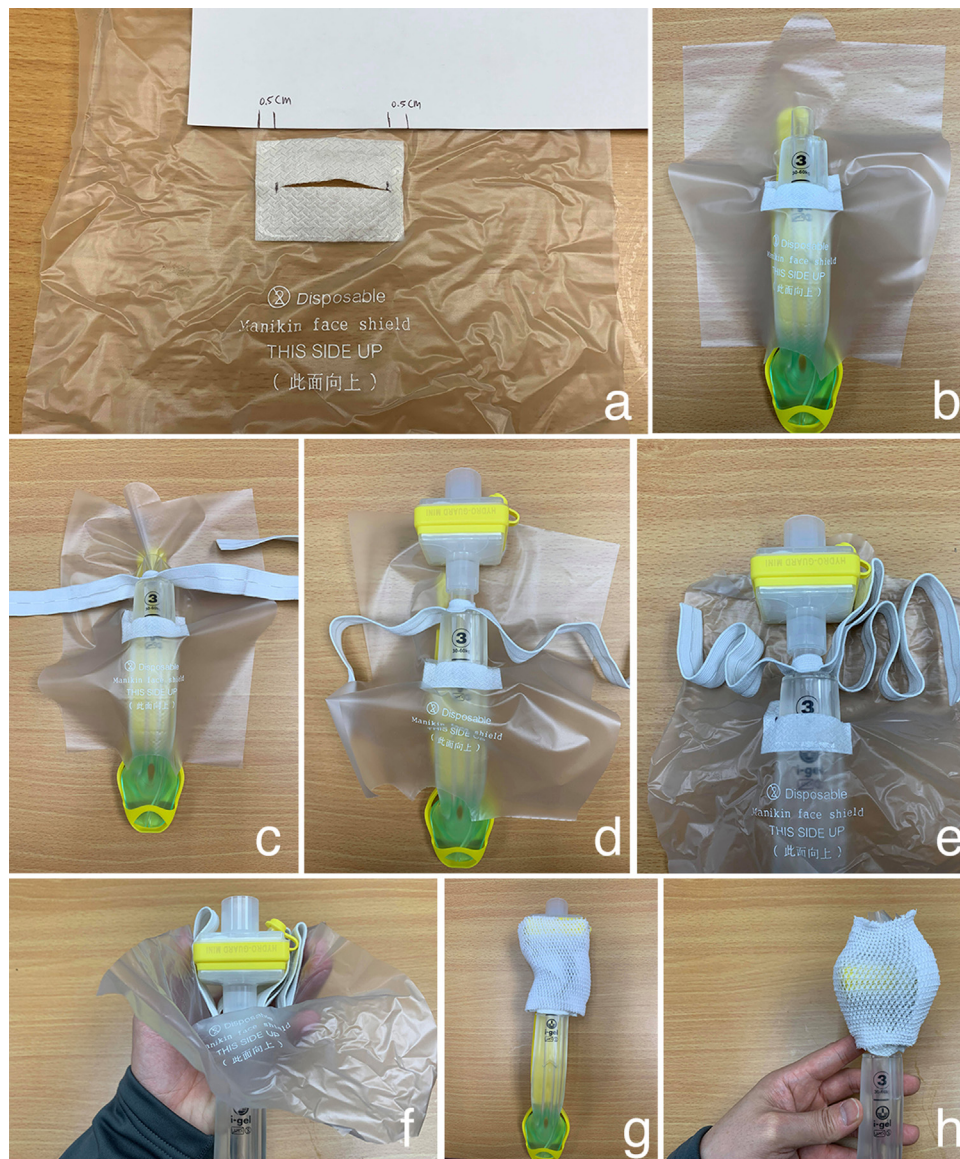


Figure 1 – Steps to compactly assemble Taipei Azalea.

Compared with SGA, tracheal intubation does not offer OHCA patients with better long-term functional outcome⁵ and presumably could expose EMT to greater risk of disease transmission. The Taipei Azalea provides a reasonably safe and simple airway management process for OHCA resuscitation during the COVID-19 pandemic.

Conflict of interest

The author declares that there is no conflict of interest.

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